



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

SEP - 8 2016

OFFICE OF
AIR AND RADIATION

The Honorable James M. Inhofe
Chairman
Committee on Environment and Public Works
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

Thank you for your letters of May 24, 2016, to the U.S. Environmental Protection Agency concerning technical documents and rules related to the oil and natural gas sector. Your letters focused on the five technical white papers on potentially significant sources of emissions in the oil and gas sector that the EPA released for external peer review and public comment in April 2014 and the methane rules for new, modified, and reconstructed oil and gas systems that the EPA finalized in May 2016. The Administrator asked that I respond on her behalf.

Your letter on the five technical white papers on potentially significant sources of emissions in the oil and gas sector expressed concern that the EPA had not revised the technical white papers based on peer review feedback and public comments we had received, as you had suggested in your September 3, 2014, letter to the EPA. Further, you asked questions related to the EPA's interaction with state governments and with oil and gas industry representatives between September 2014 and May 2016.

The purpose of the white papers was to document and share publicly the EPA's state of knowledge in the five topic areas and to solicit input, both through peer review and public comment, that could be considered as the agency worked to identify further opportunities to mitigate harmful emissions from the oil and natural gas sector and to develop effective, commonsense measures. I want to assure you that the agency carefully considered all of the information received from peer reviewers and from the public. The agency used the information gained from the white paper review process to inform the development of technically-sound regulations for the oil and natural gas sector. The white papers themselves were not revised. Instead, the improved information formed the basis for developing a suite of proposed rules and draft guidance, which were open for public comment. In the course of finalizing those actions, the EPA responded in full to the public comments received.

Throughout the white paper and regulatory development processes, the agency remained committed to a robust dialogue with all stakeholders in the oil and gas sector, including the industry and states, throughout its work in the oil and gas sector. During the period September 2014 to May 2016, the agency met with industry associations, as well as representatives from individual companies, for technical discussions to inform development of the new source performance standards (NSPS), the Source Determination Rule, the Federal Implementation Plan for Indian Country, and the Control Techniques Guidelines. These meetings involved groups that included the American Petroleum Institute (API), the Gas Processors Association (GPA), the Independent Petroleum Association of America

(IPAA), the Interstate Natural Gas Association of America (INGAA), the Fluid Sealing Association (FSA), the Kentucky Oil and Gas Association (KOGA) and the Texas Oil and Gas Association (TXOGA), as well as Chevron, Shell, Anadarko, Noble and others. In the spring of 2015, prior to developing the proposed regulations, the EPA convened multiple conference calls with state and local air agencies and with tribes to solicit their input. Participants in those calls included representatives from Oklahoma, Texas, Colorado, Wyoming, California, Pennsylvania, West Virginia, New York, and several tribes.

Your letter on the methane rules for new, modified, and reconstructed oil and gas systems stated that the EPA used an inadequate social cost of methane estimate and did not address public comments. In addition, you questioned the estimated impact of domestic emissions on global temperature. Further, you ask if the EPA considered the possibility of increased foreign production causing climate forcing emissions as a result of this rule.

The Regulatory Impact Analysis accompanying the methane rules for new, modified, and reconstructed oil and gas systems presented estimates of the climate change benefits of reducing methane emissions, referred to as the social cost of methane, which were published in the peer-reviewed scientific literature. Specifically, Marten et al. (2014) developed these social cost of methane estimates, which are the first set of published estimates that are fully consistent with the modeling assumptions underlying the interagency working group's social cost of carbon (SC-CO₂) estimates. The Marten et al. methodology and resulting estimates themselves underwent a standard double blind peer review process prior to journal publication. The EPA then sought additional external peer review before applying this work as a part of the primary regulatory impact analysis of a proposed regulation.

Consistent with agency practice, the EPA has sought public comment on the valuation of non-CO₂ greenhouse gas impacts in regulatory analyses since 2011, and specifically on the application of the Marten et al. estimates in a number of proposed rules, including the regulatory impact analysis conducted for the oil and gas proposed rule. The EPA considered and responded to every public comment on the social cost of methane that was submitted to this rulemaking. The preamble to the final rule refers readers to the Response to Comments document for the EPA's complete response to comments received on the social cost of methane as part of this rulemaking (81 FR 35888; 6/3/16). Section 12.9 of the Response to Comments document presents the EPA's detailed response to each public comment submitted to the rulemaking on the social cost of methane. This document has been available in the rulemaking docket since the publication of the final rule in the Federal Register on June 3, 2016. See <http://www.regulations.gov>, document number EPA-HQ-OAR-2010-0505-7632.

The EPA disagrees with your assessment that domestic methane emission reductions will have no meaningful climate benefits. A 40-45 percent reduction below 2012 levels is a significant contribution to domestic and global greenhouse gas emissions reductions that will reduce the rate of climate change and its associated impacts. Using the central estimate of the social cost of methane, the benefits of the rule resulting from a reduction in climate change due to emissions reductions in the year 2025 were estimated to be \$690 million, outweighing the estimated costs by \$170 million in that year.

It appears that the estimated impact of the rule cited in your letter was drawn from a blog post that did not use methods that are consistent with the IPCC or best scientific practice. However, while the changes in temperature resulting from the rule will be a fraction of a degree, understanding the spatial and temporal scales of climate change leads to a recognition that marginal benefits of temperature change (and sea level rise, and ocean acidification, and precipitation changes, and air quality) from any

one program can become sizeable impacts when aggregated over billions of individuals, hundreds of thousands of miles of coastline, or another appropriate metric. The social cost of methane is the right tool to do this kind of aggregation. That is, it appropriately monetizes impacts by aggregating over space and time and types of impacts.

The collective GHG emissions from the oil and natural gas source category are significant, whether the comparison is domestic (where this sector is the largest source of methane emissions, accounting for 32 percent of United States methane and 3.4 percent of total United States emissions of all GHG), global (where this sector, while accounting for 0.5 percent of all global GHG emissions, emits more than the total national emissions of over 150 countries, and combined emissions of over 50 countries), or when both the domestic and global GHG emissions comparisons are viewed in combination. Consideration of the global context is important. GHG emissions from United States oil and natural gas production and natural gas processing and transmission will become globally well-mixed in the atmosphere, and thus will have an effect on the United States regional climate, as well as the global climate as a whole for years and indeed many decades to come.

As was the case in 2009, no single GHG source category dominates on the global scale. While the oil and natural gas source category, like many (if not all) individual GHG source categories, could appear small in comparison to total emissions, in fact, it is a very important contributor in terms of both absolute emissions, and in comparison to other source categories globally or within the United States.

The final NSPS achieves reductions of GHG and VOC emissions through cost-effective direct regulation and achieves reduction of hazardous air pollutant (HAP) emissions as a co-benefit. The final regulatory impact analysis (RIA) for the NSPS includes an economic impact analysis and an analysis of the climate, health, and welfare impacts anticipated from the final NSPS. The RIA demonstrates that the rule's benefits outweigh these costs.

While the only benefits monetized for this rule are GHG-related climate benefits from methane reductions, the rule will also yield benefits from reductions in VOC and HAP emissions and from reductions in methane as a precursor to global background concentrations of tropospheric ozone. Those benefits include reductions in health effects related to fine particle pollution, ozone and air toxics, along with improvements in visibility. The EPA was unable to monetize the benefits of VOC reductions simply because of the difficulties in modeling the impacts of those reductions with the current data available. A detailed discussion of these unquantified benefits appears in section IX of the preamble, as well as in the RIA.

Considering all the costs and benefits of this rule, including the revenues from recovered natural gas that would otherwise be vented, the rule results in a net benefit. The quantified net benefits (the difference between monetized benefits and compliance costs) are estimated to be \$35 million in 2020 and \$170 million in 2025 using a 3-percent discount rate (model average) for climate benefits in both years. All dollar amounts are in 2012 dollars.

The EPA does not anticipate significant shifts toward foreign production of oil and natural gas as a result of the final rule. Therefore, we do not anticipate increases in global emissions as a result of this rule. As part of the Regulatory Impact Analysis for this rule, the EPA estimated the impact of the final regulation on the U.S. energy markets, including impacts on U.S. oil and natural gas drilling, production, prices and trade using the National Energy Modeling Systems (NEMS). As stated in Section 6.2 of the RIA, the EPA estimated that the final rule will have relatively small impacts on the oil and natural gas drilling, production, and prices in the United States over the 2020 to 2025 period, relative to the

baseline. In addition, the EPA estimated that the final NSPS will not lead to a market advantage for international competitors or an overall increase in emissions over the 2020 to 2025 period. Net imports of crude oil are not estimated to change in response to the rule. Net imports of natural gas are estimated to increase by about 0.11 percent across the 2020 to 2025 period under the rule. However, trade in natural gas is relatively small compared to domestic production that is consumed domestically.

Again, thank you for your letters. If you have further questions, please contact me or your staff may contact Kevin Bailey in the EPA's Office of Congressional and Intergovernmental Relations at bailey.kevinj@epa.gov or at (202) 564-2998.

Sincerely,

A handwritten signature in blue ink, appearing to read "Janet G. McCabe".

Janet G. McCabe
Acting Assistant Administrator